# NewsRelease

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**LOCAL PROJECTS CHOSEN**

## NASA selects new aircraft technologies for research

Engineers and technicians at the Langley Research Center in Hampton and a Newport News company will play a significant role in developing revolutionary flight technologies, thanks to awards from NASA's Office of Aero-Space Technology.

NASA officials have selected nine aeronautical concepts that will receive $300,000 for Phase I research as part of its Revolutionary Concepts (REVCON) program. REVCON accelerates the exploration of high-risk, breakthrough technologies in atmospheric flight.

Langley is part of the REVCON team led out of NASA's Dryden Flight Research Center, Edwards, Calif., with significant involvement from NASA's Ames Research Center, Moffett Field, Calif., and Glenn Research Center, Cleveland, Ohio.

The nine winning projects are described below.

Joined-Wing Integrated Structures Flight Demonstration is a revolutionary airborne surveillance concept consisting of a joined-wing aircraft with radar apertures integrated into the four joined wings. Langley is the lead with partners from Dryden; The Boeing Company, Phantom Works Division, Seattle, Wash.; Naval Air System Command, Patuxent River, Md.; and the Air Force Research Laboratory, Dayton, Ohio.

Smart Vehicle-Advanced Technology Demonstrator consists of an uninhabited technology demonstrator that will showcase innovative, hingeless aerodynamic effectors that will increase the maneuverability and performance of the vehicle with reduced signature. This project will be led by Langley with partners Lockheed Martin Tactical Aircraft Systems, Fort Worth, Texas;

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Physical Sciences, Inc., Andover, Maine; Tel Aviv University, Israel; Naval Air Systems Command, Patuxent River, Md.; and Dryden.

Swashplateless Flight will be demonstrated by the team of Advanced Technologies, Inc., Newport News; Diversified Technologies, Inc., Bedford, Mass.; Ames; Dryden and Langley. They will integrate an on-the-blade, electromechanical servo-actuator into a civil helicopter and demonstrate primary flight control without using a mechanical swashplate.

APEX is a highly instrumented, remotely piloted glider air-launched at an altitude of 100,000 feet by a balloon. It will obtain data to validate design and analysis methods for high altitude and high-subsonic speeds. Dryden leads a team that includes Ames, Langley and Glenn.

The Shape Memory Alloy Variable Area Fan Nozzle project will address the development of smart-material actuation for a variable-area fan nozzle. United Technologies Research Center will lead the project with support from partners, Pratt and Whitney, East Hartford, Conn.; Northrop-Grumman, Los Angeles, Calif.; Dryden, Glenn and Langley.

The goal of the Variable Diameter Tilt Rotor flight experiment is to advance the technology readiness of a concept that optimizes the rotor configuration for both hover and cruise flight. This project joins Sikorsky Aircraft Corporation, Stratford, Conn., as the lead with Dryden, Ames and Langley.

Advanced Supersonic Propulsion and Integration Research aims to validate a two-dimensional, mixed-compression engine inlet for commercial applications. Glenn will lead this project with partners Dryden; Lockheed Martin Skunk Works, Palmdale, Calif.; United Technologies Research Center, East Hartford, Conn..; General Electric Aircraft Engines, Cincinnati, Ohio; Techland Research, North Olmsted, Ohio; Gulfstream Aerospace, Cleveland, Ohio; and the Air Force Research Laboratory, Dayton, Ohio.

The Reliable Autonomous Control Technology project will develop an autonomous management system for uninhabited aircraft to achieve reliability equivalent to current piloted aircraft. Dryden is the team lead, with partners Lockheed Martin Tactical Aircraft Systems, Fort Worth, Texas; Lockheed Martin Skunk Works, Palmdale, Calif.; and NASA's Jet Propulsion Laboratory, Pasadena, Calif.

Revolutionary Propulsion for Aeronautical Vehicles is the combined effort of the lead General Electric Aircraft Engines, Cincinnati, Ohio, and partners General Electric Corporate Research and Development, Schenectady, N.Y.; Lockheed Martin Tactical Aircraft Systems; Advanced Projects Research, Inc., La Verne, Calif.; Air Force Research Laboratory, Dayton, Ohio; Glenn and Dryden. This team will design and develop a pulse-detonation technology to integrate with an existing engine and provide increased thrust and fuel efficiency.

More information about REVCON can be found on the Internet at:
http://www.dfrc.nasa.gov/Projects/revcon/index.html

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